INCH-POUND
MIL-C-39029/56E
14 February 1995
SUPERSEDING
MIL-C-39029/56D
12 April 1984

MILITARY SPECIFICATION SHEET

CONTACTS, ELECTRICAL CONNECTOR, SOCKET, CRIMP REMOVABLE. (FOR MIL-C-38999 SERIES I, III, AND IV CONNECTORS)

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-39029.

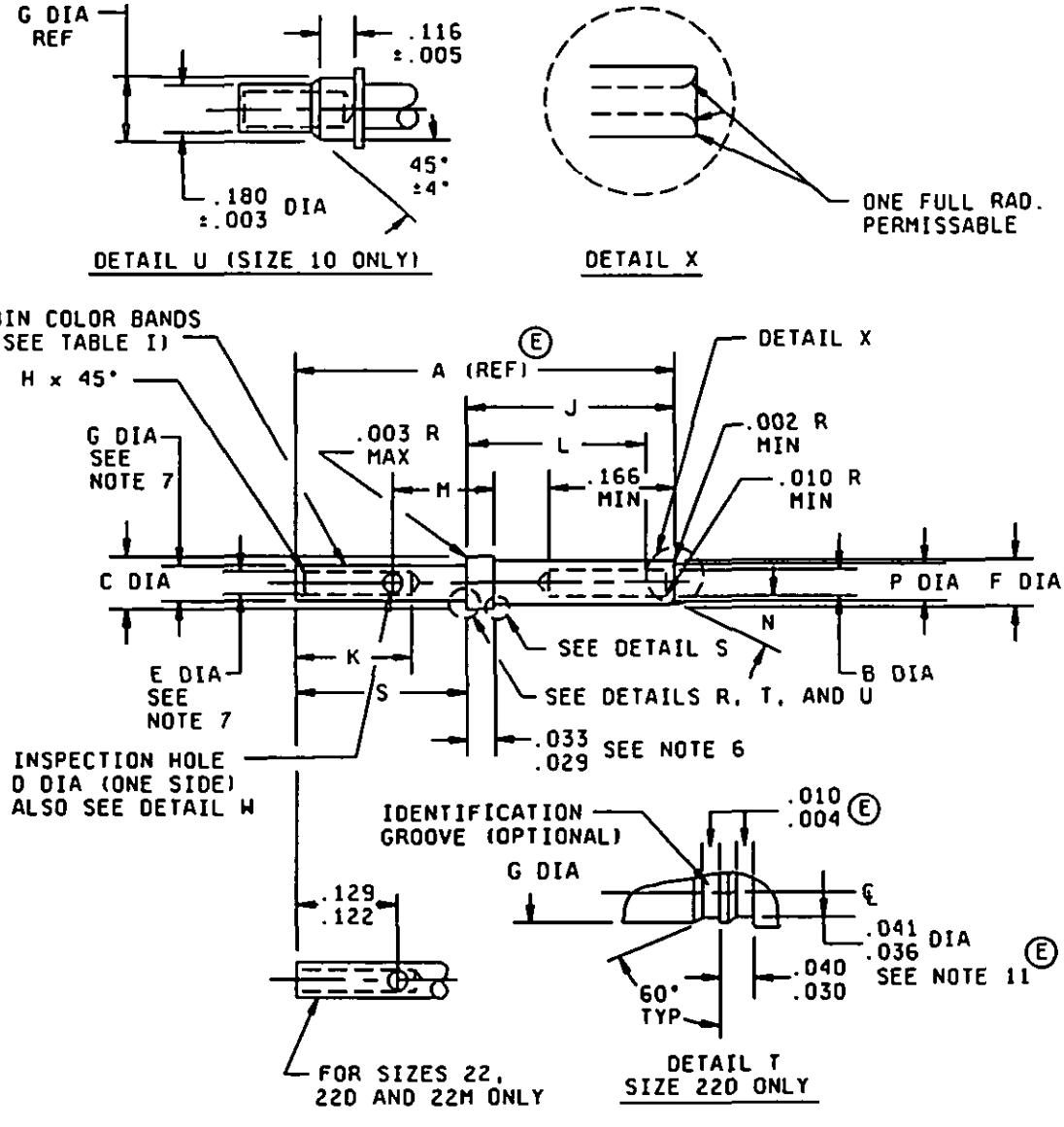
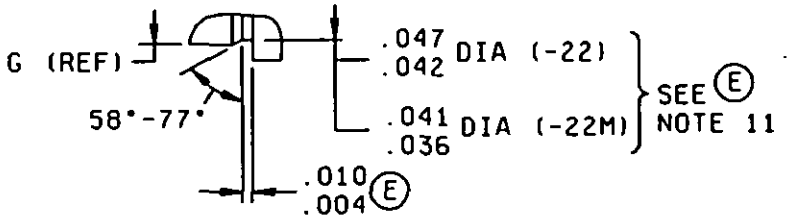
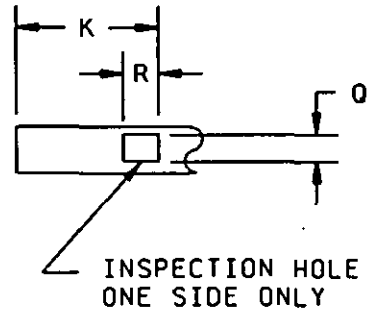


FIGURE 1. Connector contact.

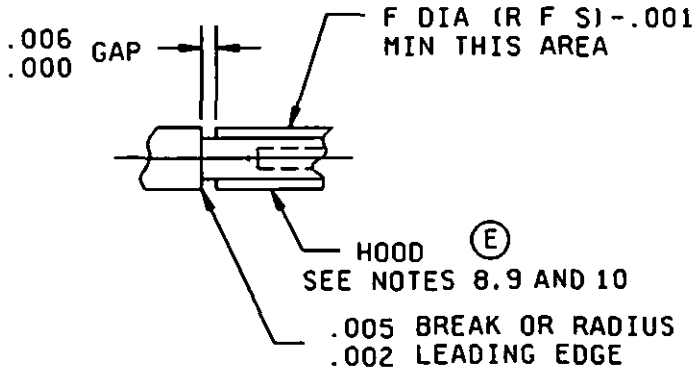
(E) denotes changes.



DETAIL R
SIZES 22, 22M ONLY



DETAIL W
(OPTIONAL DESIGN)



DETAIL S (ALL SIZES)

FIGURE 1. Connector contact - Continued.

Ⓔ

BIN code	A (REF)	B dia (min)	C dia	D dia	E dia	F dia (max)	G dia	H	J	K min	L min (note 5)	M	N°	P dia (min)	Q	R	S
348	.855	.031	.062 .060	.022 .018	.0355 .0335	.062	.048 .046	.005 .003	.626 .616	.141	.585	---	50° 44°	.047	.022 .018	.046 .018	.237 .231
349 (note 2)		.031	.062 .060	.022 .018	.029 .027	.062	.046 .044	.005 .003		.141		---	50° 44°	.047			
350 (note 2)		.031	.071 .069	.022 .018	.0375 .0355	.062	.052 .050	.005 .003		.141		---	50° 44°	.047			
351		.0415	.094 .091	.032 .026	.048 .046	.078	.070 .068	.010 .005		.209		.078 .072	47° 40°	.053	.032 .026	.063 .026	
352		.064	.130 .127	.042 .036	.068 .066	.113	.103 .101	.010 .005		.209		.088 .082	47° 40°	.084	.042 .030	.073 .036	
353		.0955	.182 .179	.042 .036	.102 .098	.161	.151 .148	.016 .005		.209		.088 .082	47° 40°	.118	.042 .030	.073 .036	
527	1.021	.1265	.242 .238	.052 .046	.140 .134	.215	.213 .207	.016 .005		.385 .355		.115 .108	NA (note 3	.146 (note 3)	NA	NA	.405 .395

NOTES:
1. Dimensions are in inches.
2. Inactive for new design.
3. Full radius permissible.
4. Dimensions shown apply after plating.
5. Point at which a square ended pin of the same basic diameter as the mating contact first engages the socket contact spring.
6. Indicated dimension does not apply for -348 and -349.
7. For -348 only, diameters E and G to be concentric within .003 (TIR) regardless of feature size (RFS); for all other contact sizes, diameters E and G to be concentric within .001 (TIR) at maximum material condition (MMC).
Ⓔ 8. The mechanical pressure member shall be shrouded. Hoods, if used, shall conform to the requirements specified herein.
9. Hoods shall not exceed contact body diameter regardless of feature size (RFS) in attachment area.
10. Optional design may have a full length corrosion resistant steel hood.
Ⓔ 11. Concentric to G dia within .003 TIR (RFS).

FIGURE 1. Connector contact - Continued.

REQUIREMENTS:

Dimensions, design characteristics, and configuration: See figure 1 and table I.

Tools: See table II.

TABLE I. Design characteristics.

BIN code	Color bands			Mating end size	Wire barrel size	Type	Class
	1st	2nd	3rd				
348	Orange	Yellow	Gray	22	22D	A	B
349 1/	Orange	Yellow	White	22	22M		
350 1/	Orange	Green	Black	22	22		
351	Orange	Green	Brown	20	20		
352	Orange	Green	Red	16	16		
353	Orange	Green	Orange	12	12		
527	Green	Red	Violet	10	10		

1/ Inactive for new design.

TABLE II. Tools.

BIN code	Basic crimping tool	Positioner	Installing tool	Removal tool
348	M22520/2-01 M22520/7-01	M22520/2-07 M22520/7-05	M81969/14-01 M81969/8-01	M81969/14-01 M81969/8-02
349	M22520/2-01 M22520/7-01	M22520/2-07 M22520/7-05	M81969/8-01 M81969/14-01	M81969/8-02 M81969/14-01
350	M22520/2-01 M22520/7-01	M22520/2-07 M22520/7-05	M81969/8-03	M81969/8-04
351	M22520/7-01 M22520/2-01 M22520/1-01	M22520/7-08 M22520/2-10 M22520/1-04 Red	M81969/8-05 M81969/14-02	M81969/8-06 M81969/14-02
352	M22520/1-01 M22520/7-01	M22520/1-04 Blue M22520/7-04	M81969/8-07 M81969/14-03	M81969/8-08 M81969/14-03
353	M22520/1-01	M22520/1-04 Yellow	M81969/8-09 M81969/14-04	M81969/8-10 M81969/14-04
527	M22520/XX 1/	M22520/XX 1/	M81969/8-XX 1/ M81969/14-05	M81969/8-YY 1/ M81969/14-05

1/ To be determined.

Random vibration: Connectors shall be subjected to the test specified in test condition V, method 2005 of MIL-STD-1344. The following details shall apply:

a. Use the vibration envelope shown on figure 2.

b. Vibration to be conducted at standard test conditions.

c. Duration shall be 8 hours in the longitudinal direction and 8 hours in a perpendicular direction for a total of 16 hours.

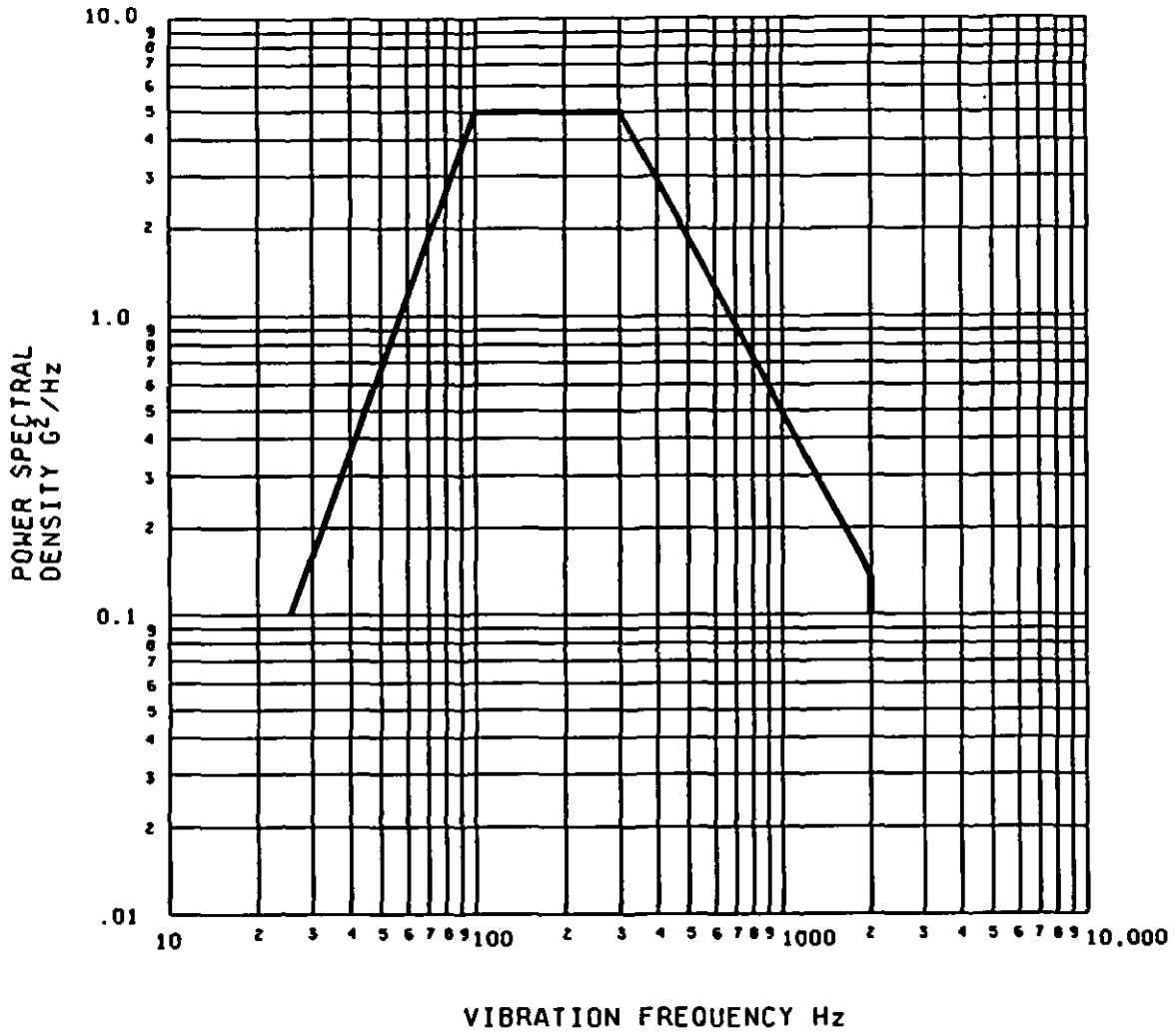


FIGURE 2. Vibration envelope.

High-impact shock: Connectors shall be coupled together by normal coupling means. All contacts shall be wired in a series circuit with 100 milliamperes maximum current flow through the series circuit during high-impact shock. Connectors shall be monitored for any discontinuities. A detector capable of detecting all discontinuities in excess of 1 microsecond shall be used. Wired and mated connectors shall be subjected to the test specified in MIL-S-901, grade A with the following modifications and additions. Mounting fixtures shall be in accordance with MIL-S-901, light weight. The cable or wire bundle shall be supported on a stationary frame in such a manner to provide a free flexing cable length between the frame and fixture of not less than 36 inches (914.4 mm).

Test condition A. The plug shall be terminated with at least 80 percent of wired contacts. The wire bundle shall be provided with straight, open frame, strain relief accessory hardware.

Operating temperature range: -65°C(-85°F) to 200°C(392°F).

If an alternate method of manufacture is used, "K" dimension shall define the location of wire stop.

Mating contact: MIL-C-39029/58.

Resistance to test probe damage: See table III.

Table III. Probe damage insertion depths.

Contact size	Insertion depth inches +.020 - .000
22, 22M, 22D, 20	.083 - .125 1/
16	.135
12	.166
10	.166

1/ Indicated dimensions represent 1/2 and 3/4 depths.

Contacts shall comply with reliability assurance provisions of MIL-STD-790 as specified in MIL-C-38999.

QPL evaluating activity: Defense Electronics Supply Center (DESC-E), Dayton, OH 45444-5270.

International interest: NEPR 57.

Military Part or Identifying Number (PIN): See table IV.

TABLE IV. Military PIN.

BIN Code	Military PIN	Supersedes PIN
348	M39029/56-348	MS27490-22D
349 1/	M39029/56-349	MS27490-22M
350 1/	M39029/56-350	MS27490-22
351	M39029/56-351	MS27490-20
352	M39029/56-352	MS27490-16
353	M39029/56-353	MS27490-12
527	M39029/56-527	---

1/ Inactive for new design.

Contact engagement and separation forces: See table V.

TABLE V. Contact engagement and separation forces.

Mating end size	Initial			After conditioning		
	Minimum separation force (ounces)	Maximum average engagement force (ounces)	Maximum engagement force (ounces)	Minimum separation force (ounces)	Maximum average engagement force (ounces)	Maximum engagement force (ounces)
	Minimum diameter MS3197 pin	Maximum diameter MS3197 pin	Maximum diameter MS3197 pin	Minimum diameter MS3197 pin	Maximum diameter MS3197 pin	Maximum diameter MS3197 pin
10	4	N/A	60	3	N/A	72

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - AS
Air Force - 85
(E) NASA - NA

Review activities:
Army - AT, MI
Navy - EC, MC, OS, SH
Air Force - 15, 17, 99
DLA - ES

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5935-3935-01)